VERIFICATION OF THE SEECOF–34 WINTER 2025/2026 CLIMATE OUTLOOK AND SEASONAL BULLETIN FOR THE TERRITORY OF SERBIA

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Temperature

The SEECOF-34 outlook for the winter 2025/2026 in Serbia indicated above- normal temperature in Serbia with 50% probability relative to the 1991–2020 climatological base period (*Figure* A).

Climatological monitoring showed that the winter 2025/2026 was warm in the entire Serbia, with above-normal temperature based on the tercile method (*Figure* B). The outlook for a warm winter was correct.

OUTLOOK – WINTER **2025/2026**

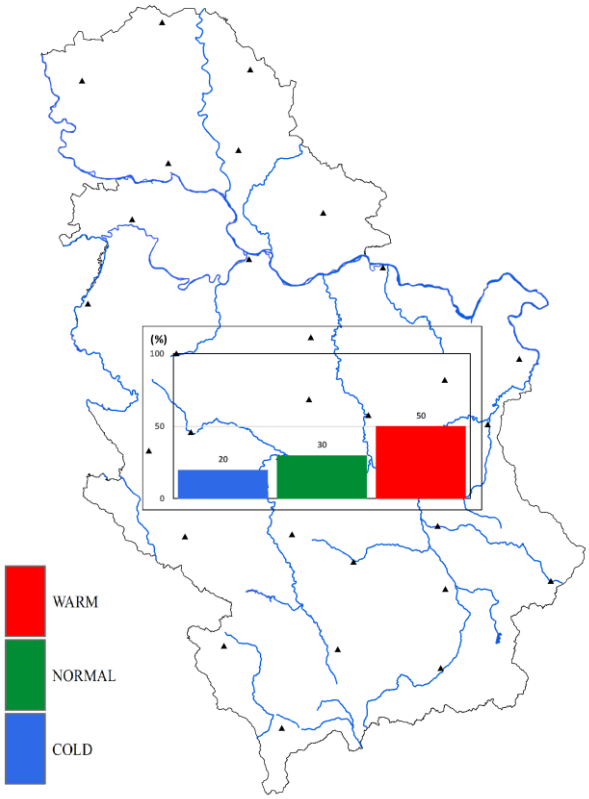

Figure A. SEECOF-34 - summer temperature outlook

MONITORING – WINTER **2025/2026**

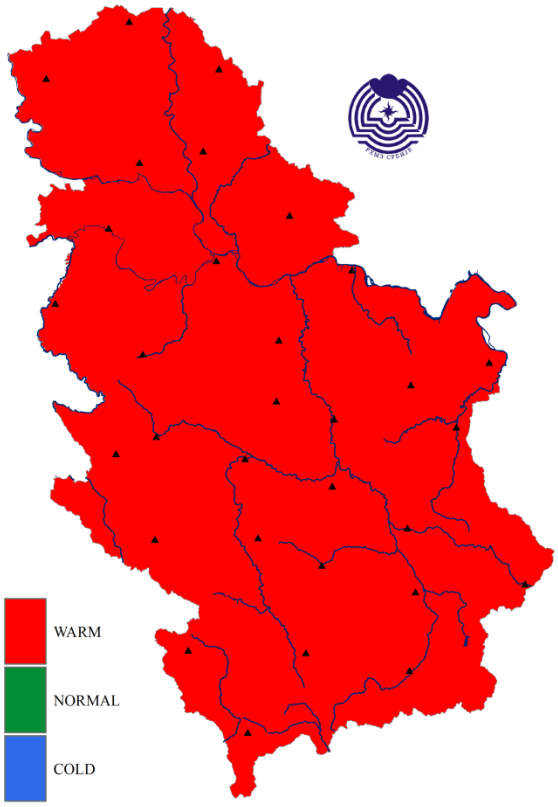

Figure B. Monitoring of the winter temperature using tercile method compared to the 1991-2020 base period

Precipitation

According to the SEECOF-34 outlook for the winter 2024/2025, approximately equal probabilities for below, near or above normal precipitation were indicated for Serbia, relative to the 1991–2020 climatological base period (Figure C), hence climatology (average seasonal precipitation) was suggested.

Based on the climatological monitoring of precipitation, the winter of 2025/2026 was normal to wet in the entire Serbia (*Figure* D). The outlook for the average winter precipitation sums was correct for the south of the country as well as for parts of western and northern Serbia.

OUTLOOK – WINTER **2025/2026**

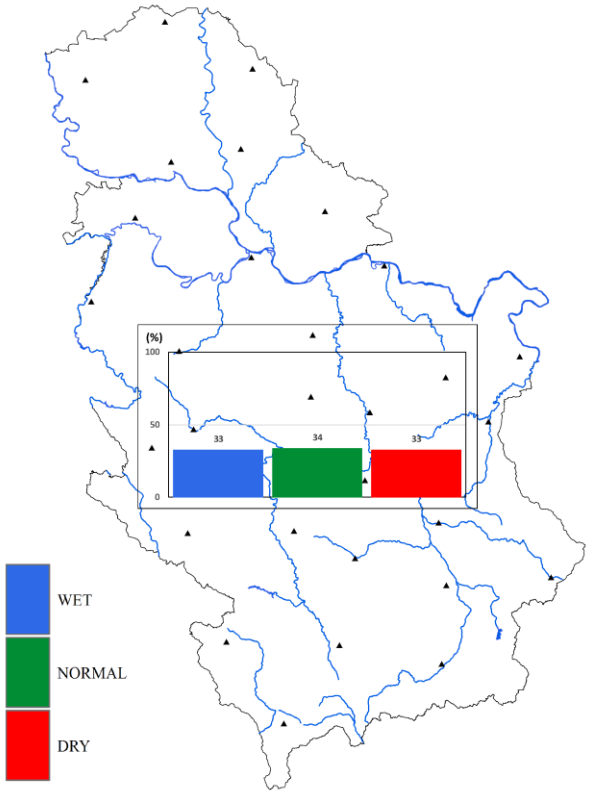

Figure C. SEECOF-34 - winter precipitation outlook

MONITORING – WINTER **2025/2026**

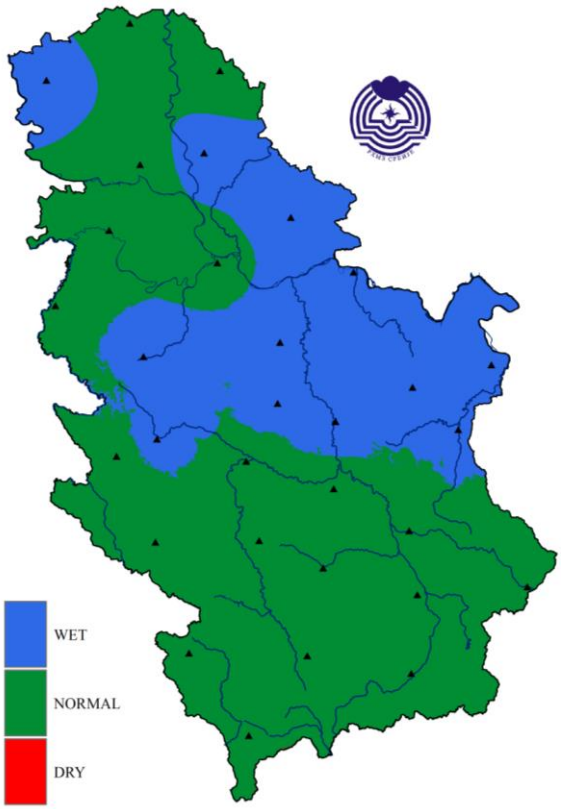

Figure D. Monitoring of the winter precipitation using tercile method compared to the 1991-2020 base period

Winter 2025/2026			Air Temperature (°C)			
Station	Rank*	Rank**	33	50	66	Observed value
Belgrade (1887-2025)	13	10	1.7	2.6	3.7	**4.5**
Palić (1945-2025)	15	12	0.2	1.0	2.1	**2.6**
Sombor (1941-2025)	14	11	0.5	1.1	2.1	**2.7**
Novi Sad (1948-2025)	13	11	0.8	1.3	2.4	**3.3**
Zrenjanin (1943-2025)	11	10	0.6	1.5	2.4	**3.3**
Kikinda (1948-2025)	12	11	0.3	1.4	2.1	**3.0**
Banatski Karlovac (1985-2025)	10	10	0.5	1.5	2.2	**3.4**
Loznica (1952-2025)	7	7	1.5	2.1	3.1	**4.4**
Sremska Mitrovica (1925-2025)	13	9	0.6	1.3	2.3	**3.3**
Valjevo (1926-2025)	10	7	1.2	1.9	2.8	**3.9**
Kragujevac (1925-2025)	10	8	1.2	2.2	2.8	**4.3**
Smederevska Palanka (1939-2025)	13	10	1.0	1.9	2.8	**3.8**
Veliko Gradište (1926-2025)	13	9	0.4	1.5	2.2	**3.2**
Crni Vrh (1966-2025)	17	14	-3.3	-2.8	-2.0	**-1.6**
Negotin (1927-2025)	22	15	0.7	1.4	1.9	**2.2**
Zlatibor (1950-2025)	9	7	-2.0	-1.2	-0.5	**1.0**
Sjenica (1946-2025)	4	3	-3.4	-2.5	-1.6	**0.4**
Pozega (1952-2025)	8	6	-1.0	0.0	0.7	**1.8**
Kraljevo (1926-2025)	11	8	1.1	1.8	2.4	**3.6**
Kopaonik (1949-2025)	7	**6**	-5.0	-4.3	-3.6	**-1.9**
Kursumlija (1952-2025)	11	9	0.4	1.3	2.0	**3.2**
Krusevac (1927-2025)	14	9	0.8	1.9	2.4	**3.4**

Cuprija (1948-2025)	12	9	0.6	1.7	2.2	**3.4**
Nis (1925-2025)	13	9	1.2	2.1	2.9	**3.8**
Leskovac (1948-2025)	9	7	0.5	1.5	2.2	**3.3**
Zajecar (1929-2025)	19	13	0.1	0.7	1.2	**1.8**
Dimitrovgrad (1945-2025)	7	5	-0.3	0.6	1.5	**3.0**
Vranje (1926-2025)	14	7	0.5	1.4	2.2	**3.6**

*Rank –period of stations work (warmest season)
**Rank – 1991-2026 period (warmest season)

Winter 2025/2026			**Precipitation sums (mm)**			
Station	Rank*	Rank**	33	50	66	Observed Value
Belgrade (1887-2025)	39	14	139.2	155.4	168.8	**166.5**
Palić (1936-2025)	36	17	95.9	114.7	133.2	**118.5**
Sombor (1931-2025)	21	8	107.6	116.0	132.8	**161.1**
Novi Sad (1945-2025)	26	12	116.0	127.7	146.7	**146.2**
Zrenjanin (1925-2025)	27	11	110.7	122.9	140.6	**145.8**
Kikinda (1925-2025)	42	14	100.6	112.6	126.7	**120.4**
Banatski Karlovac (1946-2025)	19	10	108.3	124.3	143.6	**156.4**
Loznica (1925-2025)	39	20	171.7	205.5	209.6	**186.3**
Sremska Mitrovica (1925-2025)	58	22	103.7	124.9	137.9	**121**
Valjevo (1926-2025)	25	11	140.8	162.2	181.4	**187.3**
Kragujevac (1925-2025)	16	8	118.8	127.2	142.4	**176.3**
Smederevska Palanka (1926-2025)	4	3	124.0	144.5	165.6	**225.2**
Veliko Gradište (1926-2025)	19	8	110.3	142.8	162.3	**185.3**
Crni Vrh (1966-2025)	3	3	127.6	160.5	183.1	**255**

Negotin (1941-2025)	6	4	108.4	163.1	206.9	**275.5**
Zlatibor (1950-2025)	36	23	204.3	229.6	237.8	**210.1**
Sjenica (1925-2025)	30	18	143.5	170.7	192.5	**172.2**
Pozega (1925-2025)	31	13	122.6	155.7	171.1	**173.9**
Kraljevo (1926-2025)	41	16	127.3	142.5	163.6	**152.9**
Kopaonik (1949-2025)	22	16	156.1	207.8	254.5	**233.7**
Kursumlija (1925-2025)	31	13	123.5	150.9	175.8	**175.2**
Krusevac (1925-2025)	48	22	121.8	137.7	163.4	**131.1**
Cuprija (1947-2025)	20	12	136.7	159.6	176.9	**185.8**
Nis (1925-2025)	36	17	117.7	142.4	163.1	**147.6**
Leskovac (1925-2025)	26	13	134.0	153.8	174.9	**166.5**
Zajecar (1925-2025)	9	5	102.6	140.1	158.2	**219.5**
Dimitrovgrad (1926-2025)	21	13	118.4	130.3	171.3	**167.5**
Vranje (1926-2025)	32	14	121.1	133.4	154.3	**149.7**

*Rank –period of stations work (highest seasonal precipitation)

**Rank – 1991-2026 period (highest seasonal precipitation)

Country	Seasonal temperature DJF		Seasonal precipitation DJF		High Impact Events
	Observed	SEECOF-34 climate outlook for temperature	Observed	SEECOF-34 climate outlook for precipitation	
Serbia (1)	Above normal	**Above-normal** (20, 30, 50)	Normal to above normal	**No predictive signal** (33, 34, 33)	❖ ***Warm winter in Serbia and averagely rainy in most of the country*** ❖ ***Among 10 warmest winter seasons at 11 meteorological stations*** ❖ ***Record low number of ice days in Sjenica*** ❖ ***There were 2 heat wave; the first mid-December at Crni Vrh and Kopaonik, and the second at the end of January in Kikinda and Kraljevo*** ❖ ***The 3rd wettest winter for Crni Vrh, 4th wettest for Smederevska Palanka, 6th wettest for Negotin, and 9th wettest for Zajecar***

CONTENT

Analysis of winter season 2025/2026 for Serbia relative to the 1991-2020 base period

Warm and averagely rainy winter (Figure 1) with the mean seasonal air temperature above the normal [1] and precipitation sums at the upper tercile threshold.

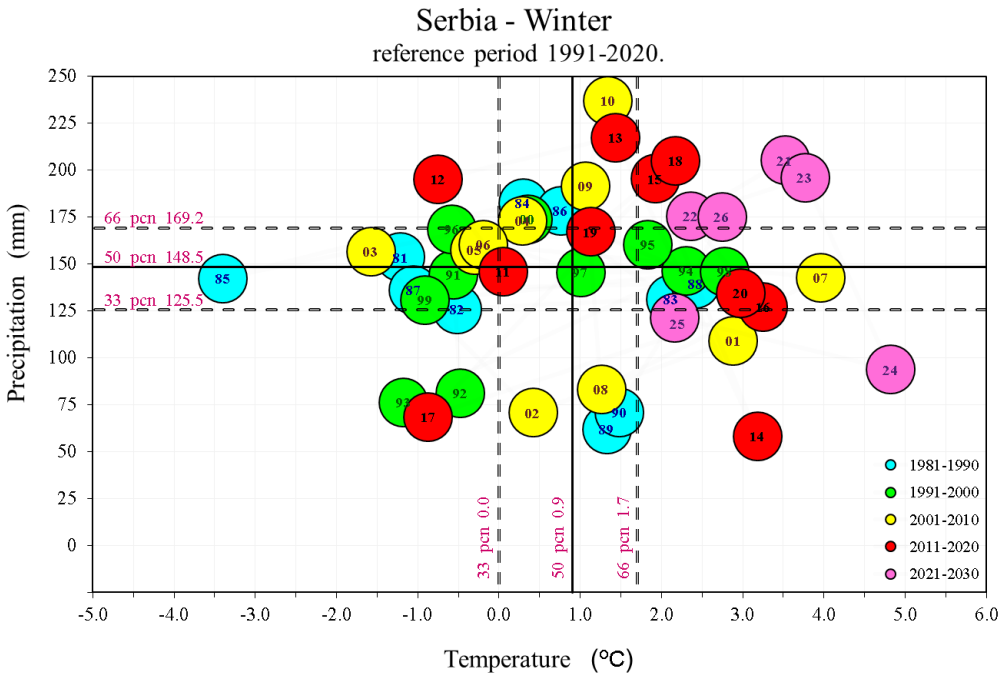

Figure 1. Assessment of mean air temperature and precipitation for winter in Serbia based on the accompanying terciles relative to the 1991-2020 base period

[1] Term **normal** refers to **climatological standard normal**, that is, the average value of a particular climate event, calculated for the period from 1 January 1991 to 31 December 2020

Temperature

Winter 2025/26 ranks as the 13th warmest for the period since 1951, with the mean air temperature of 2,7 °C and departure of +1,8 °C from the normal (*Figure 2)*. At 11 stations, this winter was among 10 warmest winter seasons since the record-keeping at these stations began (*Table 1*). Winter 2025/26 was the 4th warmest since 1947 with the mean air temperature of 0,4 °C and anomaly of +2,9 °C (*Figure 3).*

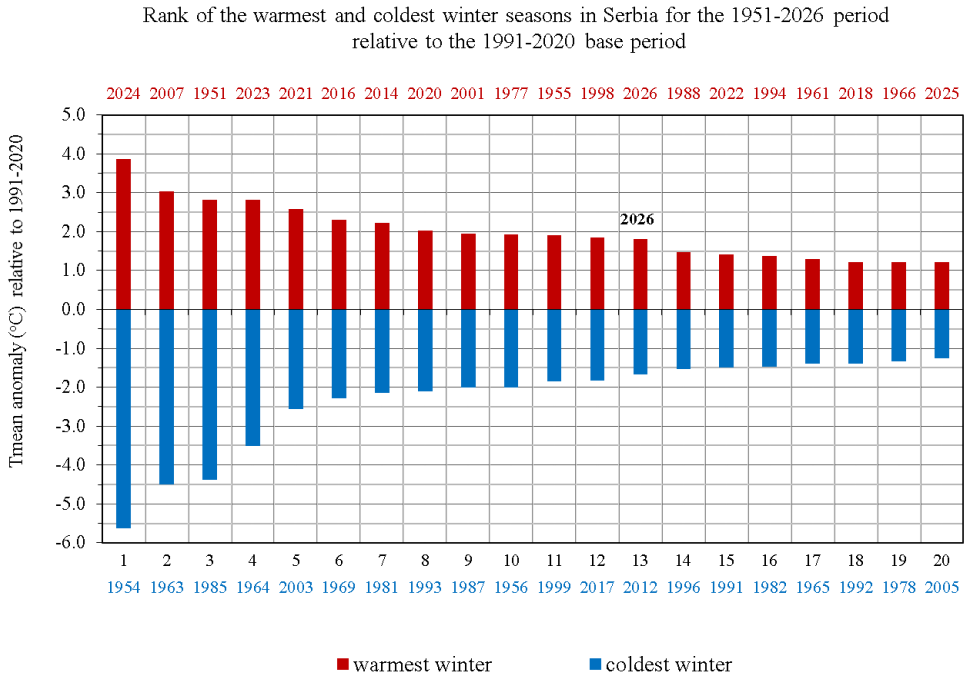

Figure 2. Rank of twenty warmest and coldest winter seasons in Serbia for the 1951-2026 period

Table 1. Ranking of Winter 2025/2026 with mean air temperature, average and departure from the normal 1991-2020

STATION	historical period	Tmean (°C) - Winter 2026	1991-2020 base period for Winter	temperature anomaly (°C)	ranking for Winter 2026
SJENICA	1947-2026	0.4	-2.5	2.9	4
DIMITROVGRAD	1946-2026	3.0	0.6	2.4	7
KOPAONIK	1950-2026	**-1.9**	-4.0	2.2	7
LOZNICA	1953-2026	4.4	2.4	2.1	7
POZEGA	1953-2026	1.8	-0.1	1.9	8
ZLATIBOR	1951-2026	1.0	-1.1	2.1	9
LESKOVAC	1949-2026	3.3	1.4	1.9	9
VRANJE	1927-2026	3.6	1.4	2.3	10
KRAGUJEVAC	1926-2026	4.3	2.2	2.1	10
VALJEVO	1927-2026	3.9	2.0	1.9	10
B.KARLOVAC	1986-2026	3.4	1.6	1.8	10

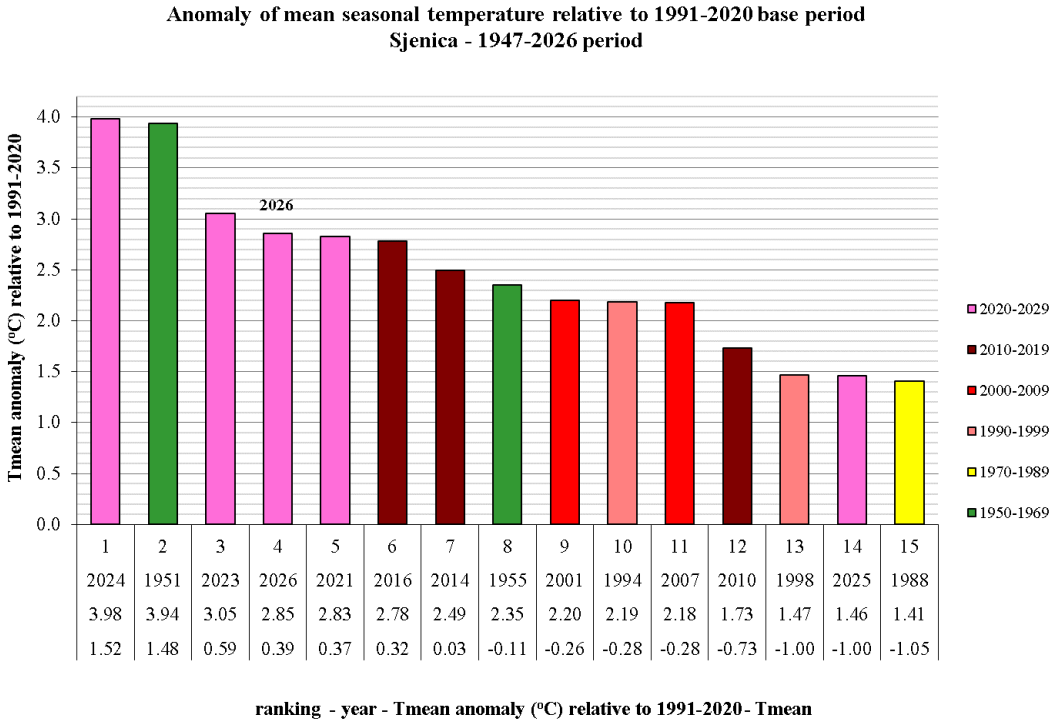

Figure 3. Rank of the warmest winter seasons in Sjenica

Mean seasonal air temperature ranged from 1,8 ºC in Pozega to 4,5 ºC in Belgrade, and ont eh mountains from -1,9 ºC at Kopaonik to 1,0 ºC at Zlatibor (*Figure 4*).

Departure of the mean seasonal air temperature from the normal during winter ranged from +0,8 ºC in Negotin to +2,9 ºC in Sjenica (*Figure 5*).

Based on the percentile method, mean seasonal air temperature during winter was in the warm category, normal category at Crni Vrh and Negotin, very warm in Loznica, Pozega, Vranje, at Zlatibor and Kopaonik, and extremely warm in Sjenica and Dimitrovgrad (*Figure 6).*

Based on the tercile method, mean seasonal air temperature during winter was in the warm category in entire Serbia (*Figure 7*).

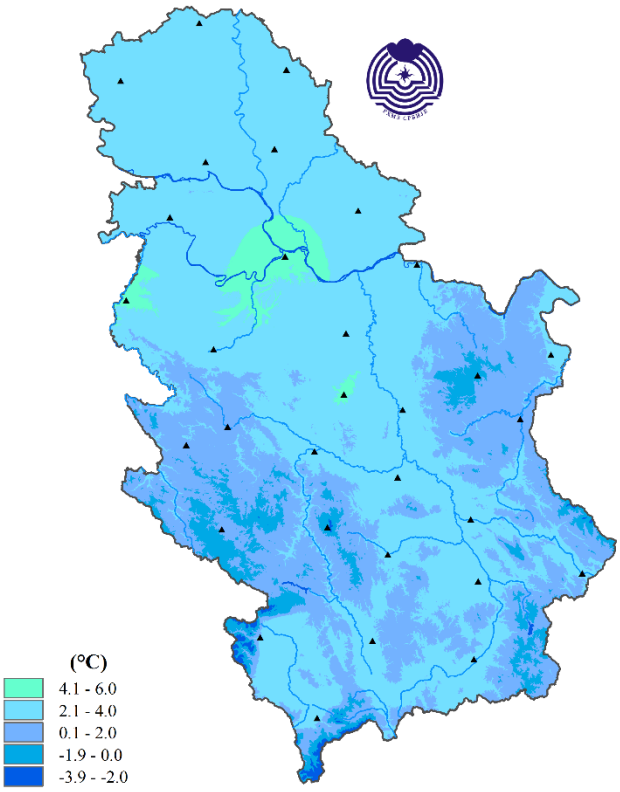

Figure 4. Spatial distribution of mean winter air temperature

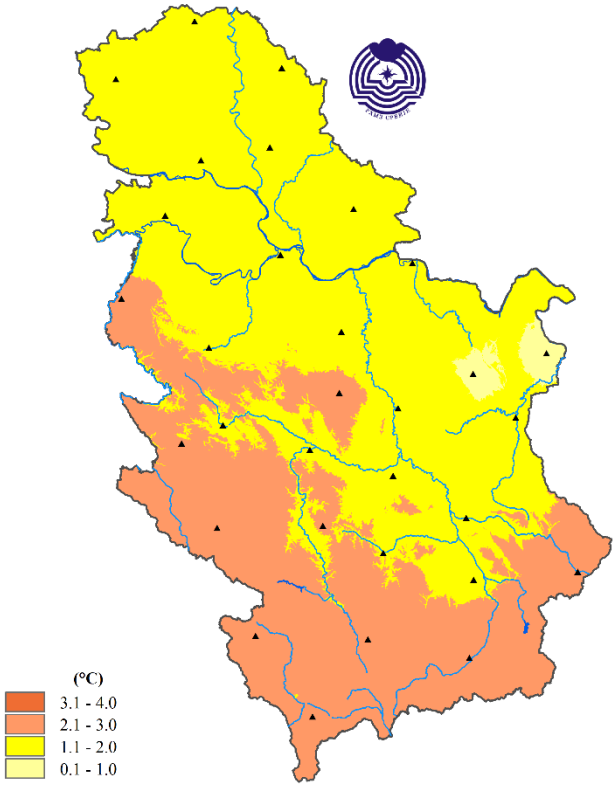

Figure 5. Spatial distribution of mean winter air temperature anomaly from the normal

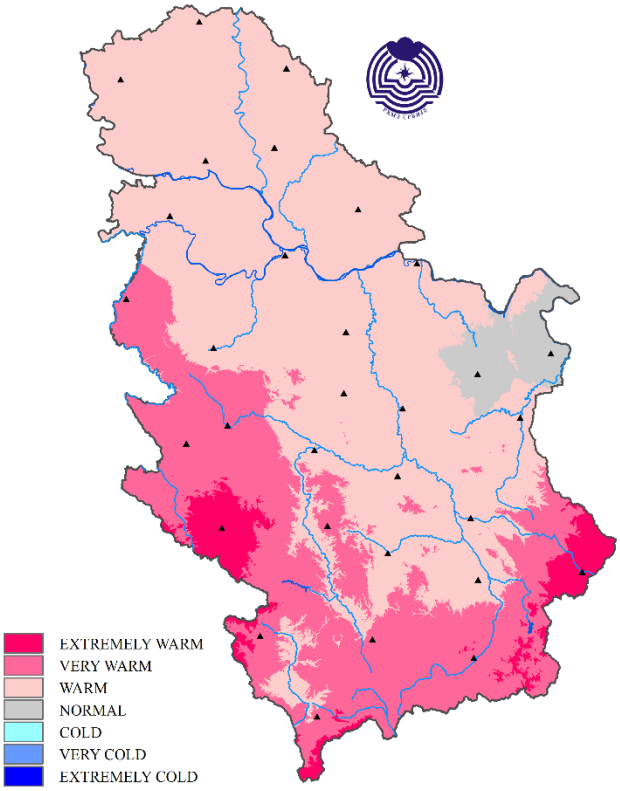

Figure 6. Spatial distribution of mean winter air temperature according to the percentile method

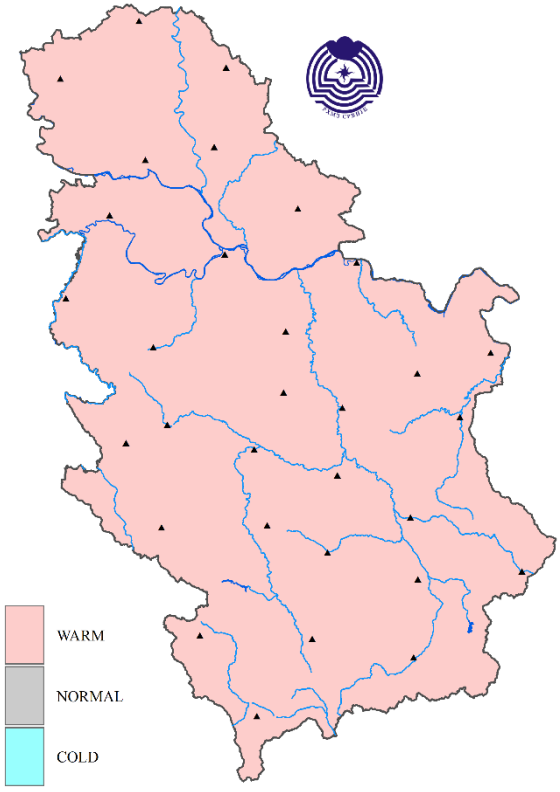

Figure 7. Spatial distribution of mean winter air temperature according to the tercile method

Figure 8 shows the assessment of the minimum and maximum air temperature in Serbia for winter based on the tercile distribution compared to the 1991-2020 base period. It can be noted that the mean minimum and mean maximum air temperature were above the upper tercile threshold.

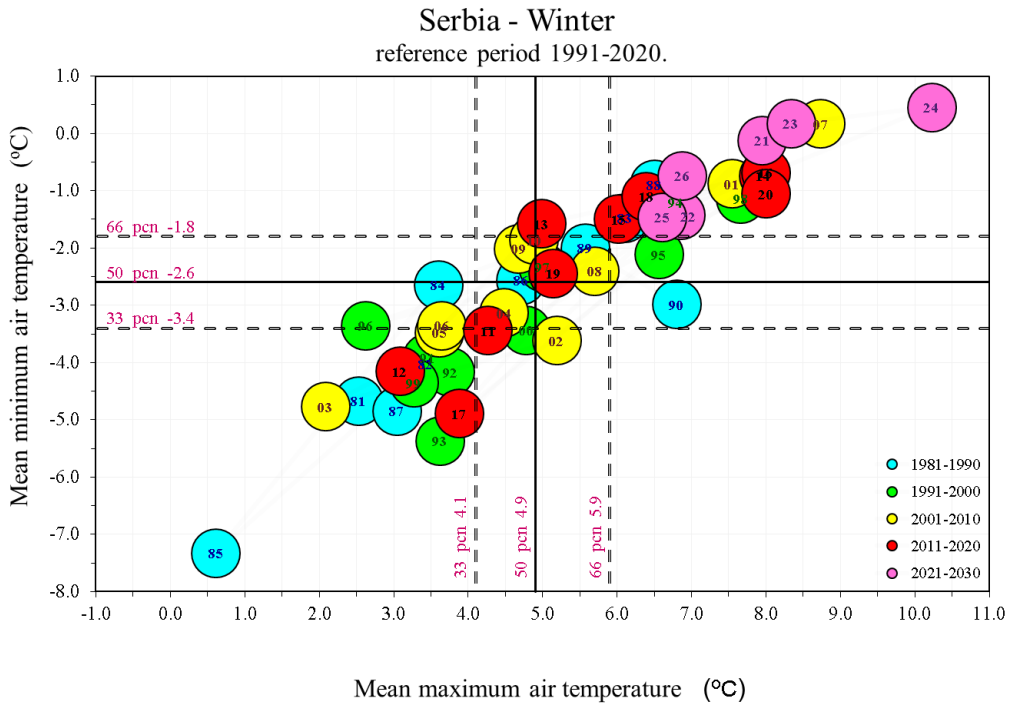

Figure 8. Assessment of minimum and maximum air temperature for Serbia with the accompanying terciles in relation to the 1991-2020 base period

Mean maximum air temperature ranged from 5,5 °C in Negotin to 8,9 °C in Kragujevcu, while Belgrade observed air temperature of 8,4 °C. In the upland, it ranged from 1,2 °C at Kopaonik to 5,8 °C in Sjenica.

The highest winter air temperature of 18,8 ºC was measured on December 10 in Zajecar. In Belgrade, the highest winter air temperature of 17,7 ºC was measured on February 12.

The number of ice days, with the maximum daily air temperature below 0 ºC, ranged from 1 in Kragujevac and Cuprija to 10 on Palic and Sombor, while Belgrade recorded 3. On the mountains, their number ranged from 5 days in Sjenica to 32 days at Crni Vrh and Kopaonik. In entire Serbia, number of ice days was below the winter average from 5 to 12 days, and on the mountains from 12 to 24 days (*Figure 9*). **Sjenica observed record low number of ice days since the record-keeping at this stations began**, total of 5 days. The previous record of 6 days was set in 2023/2024.

Mean minimum air temperature ranged from -1,6 °C in Pozega and Zajecar to 1,5 °C in Belgrade, and on the mountains from -4,4 °C at Kopaonik to -1,9 °C at Zlatibor.

The lowest winter air temperature of -17,8 ºC was measured in Pozega on January 9. The same day, very low air temperatures were recorded in Sjenica of -17,5 ºC, Smederevska Palanka -17,3 ºC, Cuprija -15,7 ºC, Velikom Gradištu -15,4 ºC. During winter, Belgrade observed air temperature of -6,2 °C on January 9.

Number of frost days, with the minimum daily air temperature below 0 ºC ranged from 27 in Belgrade to 58 days in Pozega, and on the mountains from 54 at Zlatibor to 84 at Kopaonik. Number of frost days was 9 to 19 below the winter average in most of the country (*Figure 10).*

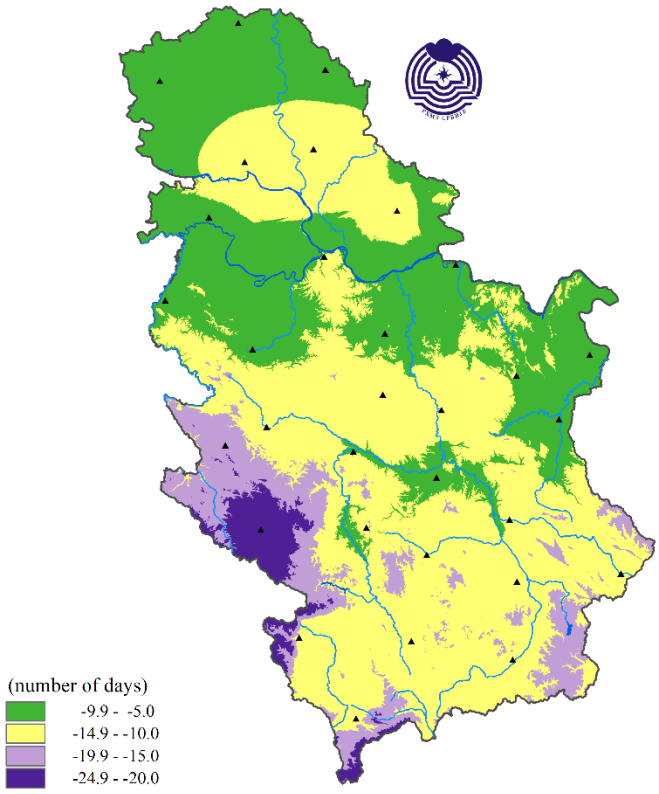

Figure 9. Deviation of the number of ice days from the normal

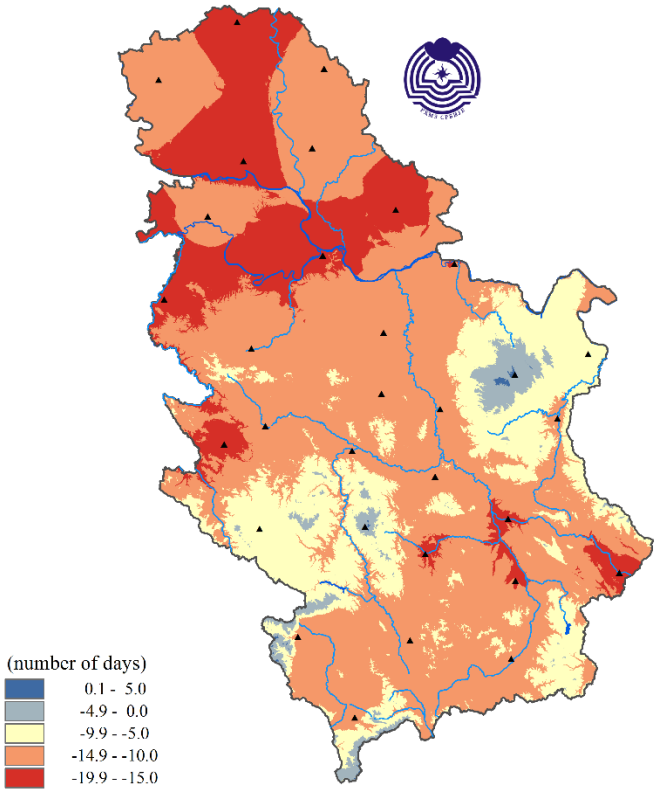

Figure 10. Deviation of the number of frost days from the normal

The highest number of days with severe frost, total of 4 days, with the minimum daily air temperature of -10 ºC, was recorded in Kursumlija and Dimitrovgrad as for the lowland. Days with severe frost were not recorded in Novi Sad, Loznica, Belgrade and Nis. On the mountains, their number ranged from 5 days at Zlatibor to 13 days at Crni Vrh. The recorded number of days with severe frost was from 2 to 7 days below the winter average in the lowland, and from 5 to 17 days below the average in the upland.

In Belgrade, warmer periods with the air temperature above the multiannual average were recorded at the beginning and mid-December, at the beginning of the first, second and end of the third decade of January, as well as most of February. Colder periods, with the air temperature below the multiannual average were recorded at the end of the first and beginning of the second decade of January, as well as the end of the second and beginning of the third decade of January and beginning of February (*Figure 11).*

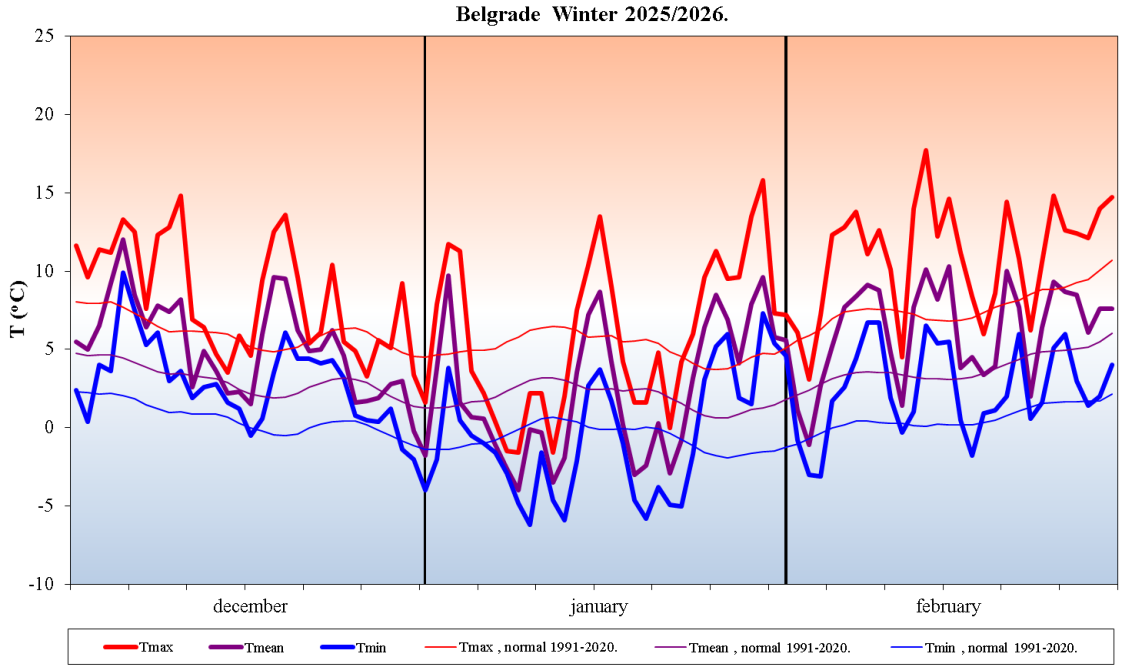

Figure 11. Three–month course of the mean, maximum and minimum daily air temperature in Belgrade

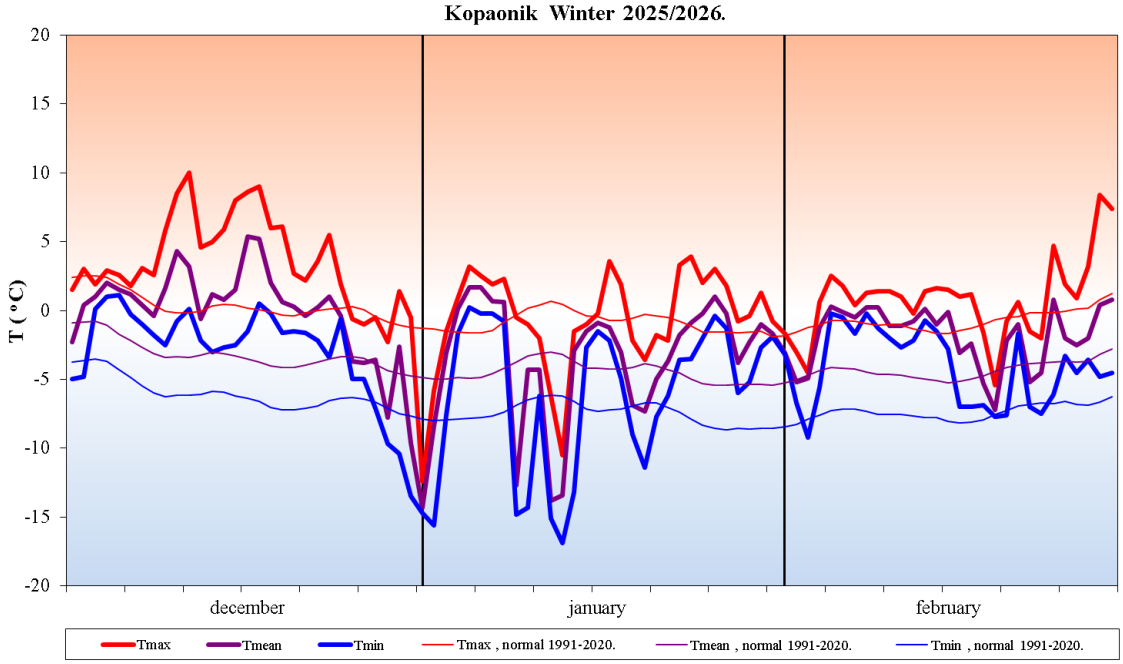

Figure 12. Three–month course of the mean, maximum and minimum daily air temperature at Kopaonik

Cold wave / heat wave

During winter 2025/2026, cold waves[2] were not recorded. There were 2 heat waves[3], the one lasting from 15 to 19 December at Crni Vrh and Kopaonik and the other from 25 to 29 January in Kikinda and Kraljevo (*Table 2*).

Table 2.

HEAT WAVES IN SERBIA - WINTER 2025/2026

(relative to the 1991-2020 base period)

DECEMBER

station/day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
PALIC																															
SOMBOR																															
KIKINDA																															
ZRENJANIN																															
NOVI SAD																															
SR.MITROVICA																															
BELGRADE																															
LOZNICA																															
VALJEVO																															
V.GRADISTE																															
SM.PALANKA																															
KRAGUJEVAC																															
KRALJEVO																															
POZEGA																															
ZLATIBOR																															
CUPRIJA																															
KRUSEVAC																															
NEGOTIN																															
ZAJECAR																															
CRNI VRH															VW	EW	VW	VW	VW												
KOPAONIK															VW	VW	VW	VW	VW												
SJENICA																															
NIS																															
VRANJE																															
DIMITROVGRAD																															
LESKOVAC																															
KURSUMLIJA																															
B.KARLOVAC																															

JANUARY

station/day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
PALIC																															
SOMBOR																															
KIKINDA																									VW	VW	VW	VW	VW		
ZRENJANIN																															
NOVI SAD																															
SR.MITROVICA																															
BELGRADE																															
LOZNICA																															
VALJEVO																															
V.GRADISTE																															
SM.PALANKA																															
KRAGUJEVAC																															
KRALJEVO																									EW	VW	VW	VW	VW		
POZEGA																															
ZLATIBOR																															
CUPRIJA																															
KRUSEVAC																															
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VRANJE																															
DIMITROVGRAD																															
LESKOVAC																															
KURSUMLIJA																															
B.KARLOVAC																															

FEBRUARY

station/day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28
PALIC																												
SOMBOR																												
KIKINDA																												
ZRENJANIN																												
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B.KARLOVAC																												

EW	EXTREMELY WARM
VW	VERY WARM
VC	VERY COLD
EC	EXTREMELY COLD

[2] Heat wave, according to the percentile method, is a period of minimum five days with maximum daily air temperature is in the very warm and extremely warm categories

[3] Cold wave, according to the percentile method, is a period of minimum five days with minimum daily air temperature is in the very cold and extremely cold categories

Precipitation

Winter 2025/26 was normal and rainy. Winter precipitation totals ranged from 118,5 mm on Palic to 275,5 mm in Negotin, and in the upland from 172,2 mm in Sjenica to 255,0 mm at Crni Vrh (*Figure 13*).

Precipitation sums in the percentages of normal ranged from 93% in Krusevac to 172% in Negotin, and in the upland from 97% at Zlatibor to 162% at Crni Vrh (*Figure 14*).

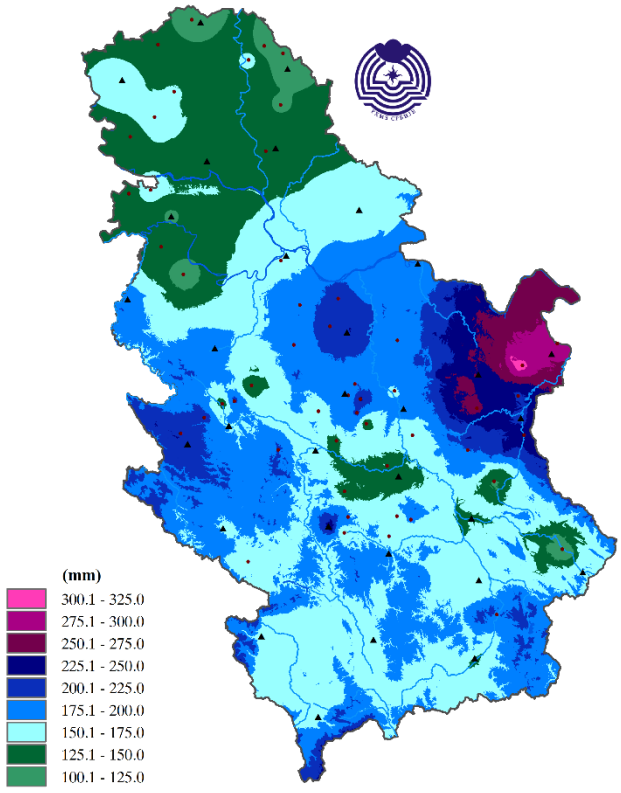


Figure 13. Spatial distribution of winter precipitation sums based on data from 28 Primary meteorological, 14 climatological and 38 rain gauge stations

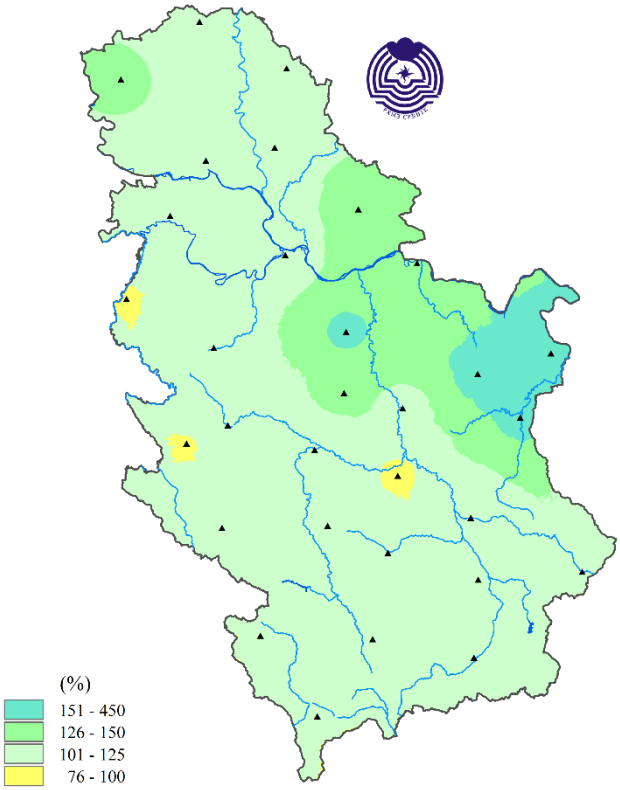


Figure 14. Spatial distribution of winter precipitation sums in percentage of normal

Based on the percentile method, winter precipitation sums were in the following categories: normal category in most of Serbia, rainy in Sombor, Banatski Karlovac, Kragujevac and Veliko Gradiste, and very rainy in Smederevska Palanka, Negotin, Zajecar and Crni Vrh (*Figure 15).*

Precipitation sums based on the tercile method were in the categories of normal and rainy (*Figure 16).*

Winter 2025/26 ranks as **the 3rd wettest** for Crni Vrh, **the 4th wettest** for Smederevska Palanka, **the 6th wettest** for Negotin, and **the 9th wettest** for Zajecar. In the appendix are graphs showing the 15 wettest years since the record-keeping for these stations began.

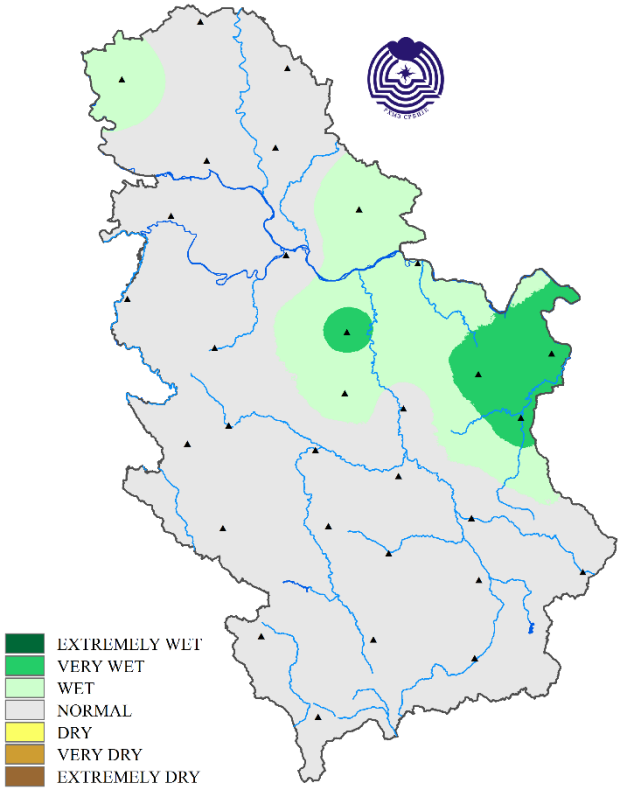


Figure 15. Winter precipitation sums according to the percentile method

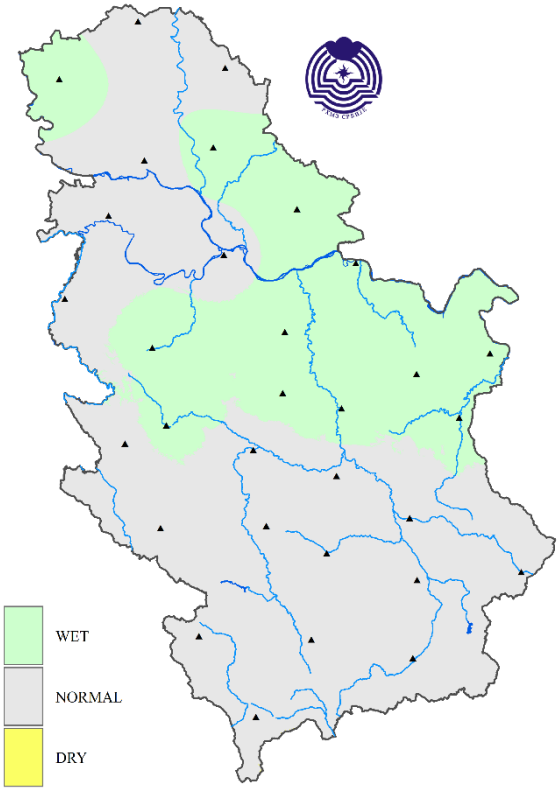


Figure 16. Winter precipitation sums according to the tercile method

The highest daily sum of 45,2 mm was measured in Loznica on January 5.

Number of days with precipitation of 0,1 mm and higher, ranged from 33 in Sremska Mitrovica to 47 in Negotin, and on the mountains from 39 in Sjenica to 47 at Kopaonik. The recorded number of days with precipitation was 6 to 15 days above the winter average in parts of northern and eastern Serbia, while on the mountains, and the parts in southwestern Serbia it was up to 6 days below the winter average (*Figure 17).*

The fewest number of days with the snow cover was recorded in Vranje, total of 7 days, whereas the highest number of days with snow cover, total of 33 days was registered in Negotin. In the hilly-mountainous regions of Serbia, the fewest number of days with snow cover, total of 40, was registered at Zlatibor, and the highest number of days with snow cover, total of 79, was recorded at Kopaonik. Number of days with snow cover was below the average, ranging from 1 in Negotin to 26 days in Leskovac, and in the upland from 6 days at Crni Vrh to 32 days below the average at Zlatibor (*Figure 18).*

On February 18 and 22, Crni Vrh observed the maximum snow depth of 61 cm. In the lowland, the highest snow depth of 38 cm was measured in Sremska Mitrovica on January 5.

During this winter, Vranje recorded snow cover of 3 cm thereby equaling with the previous record set in 1951 on January 19 and 21.

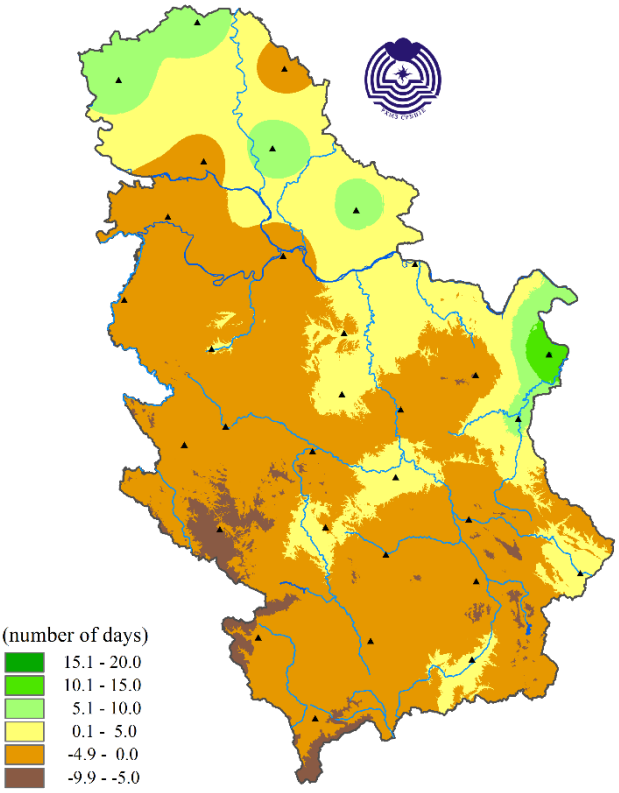


Figure 17. Deviation of number of days with precipitation of 0.1 mm and more from the normal

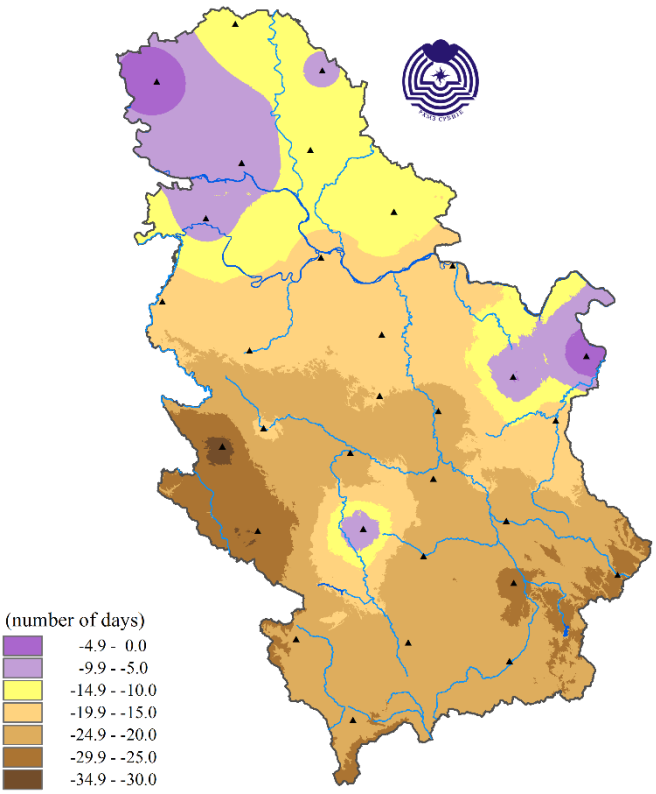


Figure 18. Deviation of number of days with snow cover from the normal

Figure 19 shows cumulative precipitation sums for Belgrade during winter, per months compared to the average cumulative precipitation sums. In the appendix are graphs for the stations: Negotin, Crni Vrh and Smederevska Palanka.

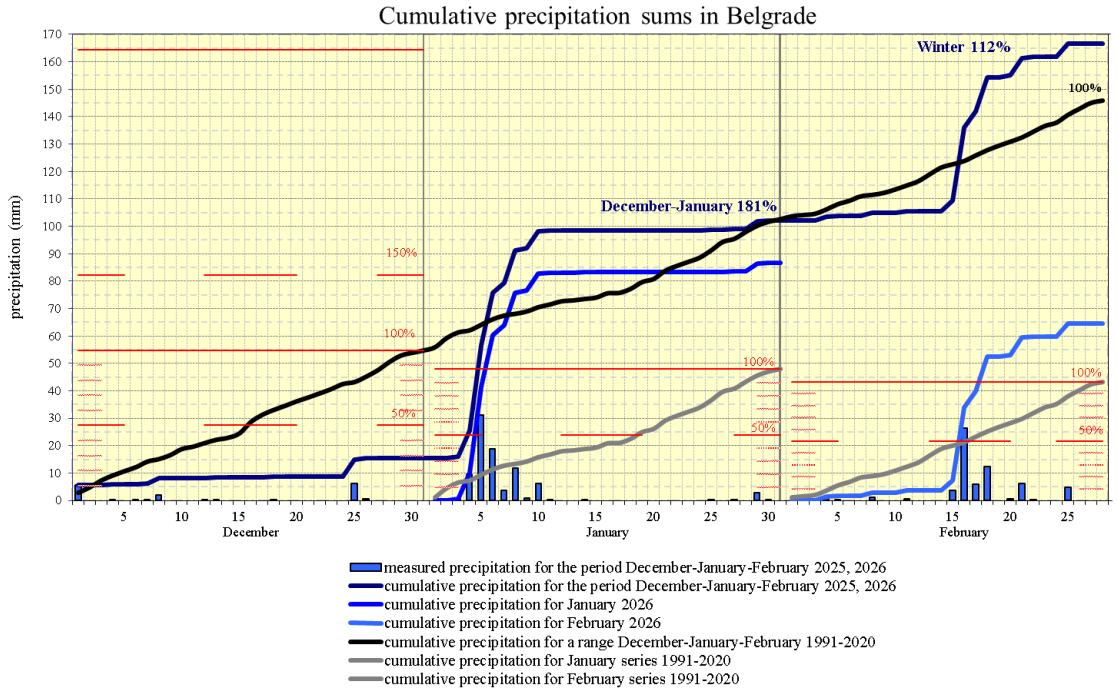


Figure 19. Daily and cumulative precipitation sums for Belgrade

Sunshine duration (insolation)

Winter insolation ranged from 131,5 hours in Leskovac to 250,7 hours in Sremska Mitrovica (*Figure 20*).

Compared to the normal for the 1991-2020 base period, sunshine duration ranged from 57% at Crni Vrh to 118% in Sremska Mitrovica (*Figure 21*).

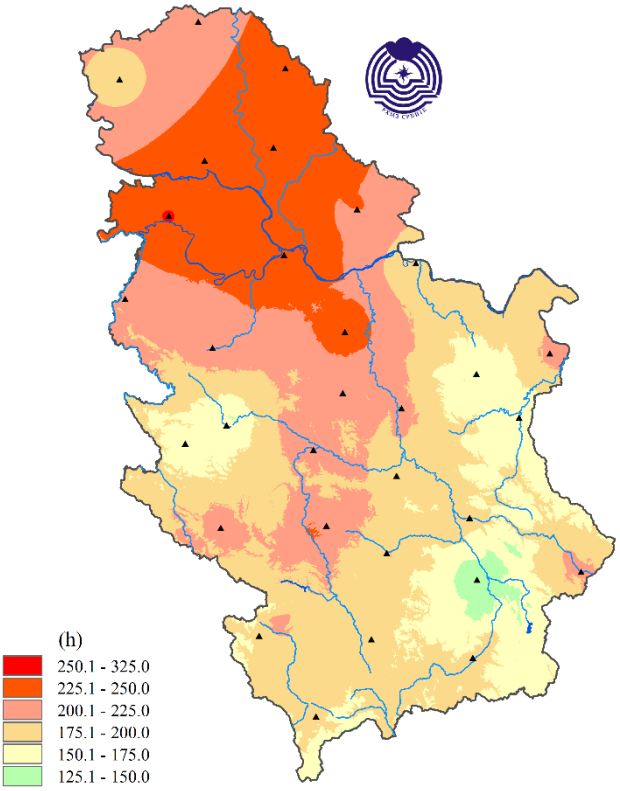


Figure 20. Insolation in hours

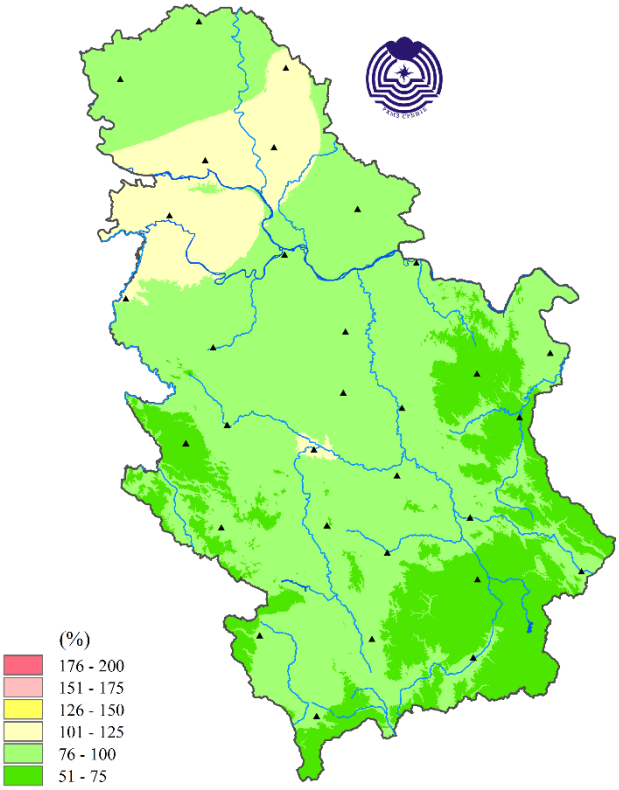


Figure 21. Insolation in percentage of normal

Analysis of the winter season 2025/2026 for Serbia relative to the 1961-1990 base period

Temperature

Departure of the mean air temperature from the normal, during winter, for the 1961-1990 base period, ranged from +1,5 ºC at Crni Vrh to +3,7 ºC in Sjenica (*Figure 22*).

Based on the percentile method, mean winter air temperature was in the categories of very warm and extremely warm, and warm in Negotin, Zajecar and Crni Vrh (*Figure 23*).

Based on the tercile method, mean winter air temperature was above the average, in the warm category across entire Serbia.

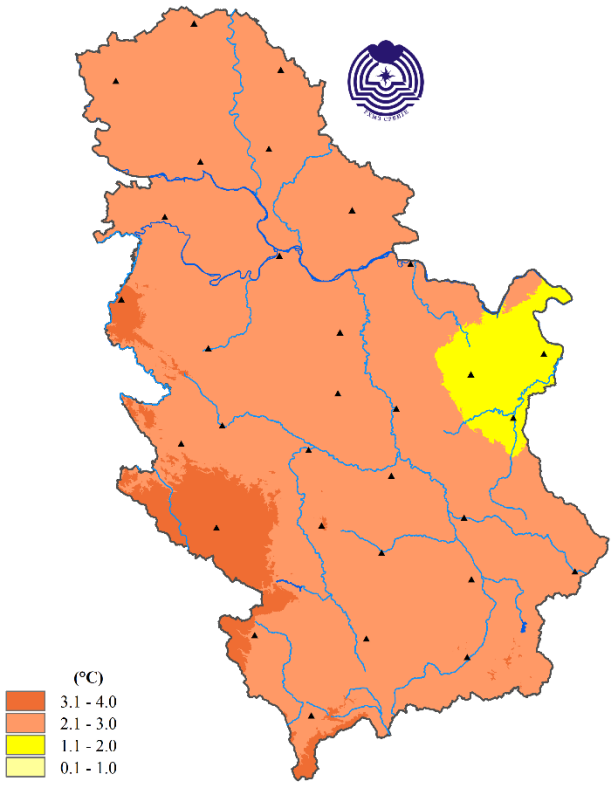


Figure 22. Spatial distribution of mean winter air temperature anomaly from the 1961-1990 normal

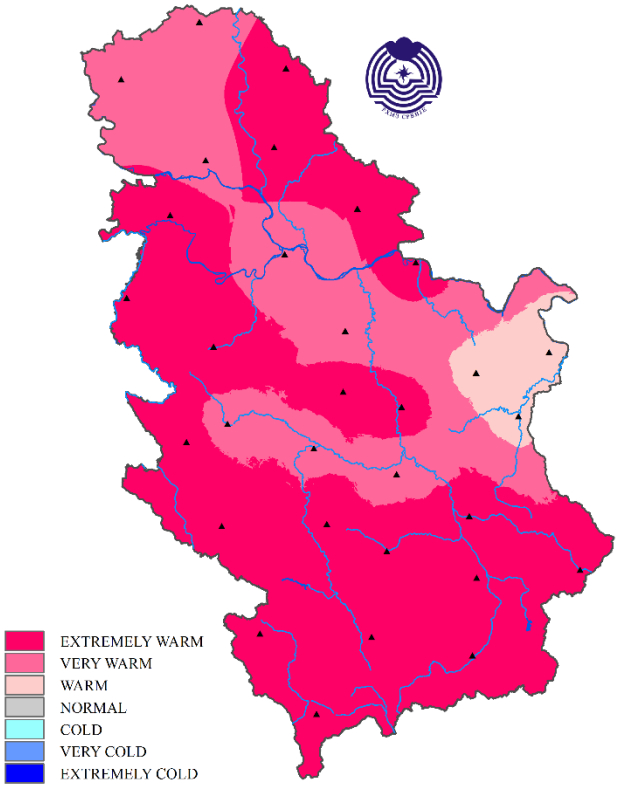


Figure 23. Spatial distribution of mean winter air temperature according to the percentile method

Precipitation

Precipitation sums expressed in the percentages of normal for the 1961-1990 base period ranged from 94% in Kraljevo to 189% in Negotina (*Figure 24*).

Based on the percentile method, winter precipitation sums were in the categories of normal and rainy in most of Serbia, very rainy in Negotin and Zajecar, and extremely rainy in Smederevska Palanka and Crni Vrh (*Figure 25).*

Precipitation sums based on the tercile method was in the categories of rainy and normal.

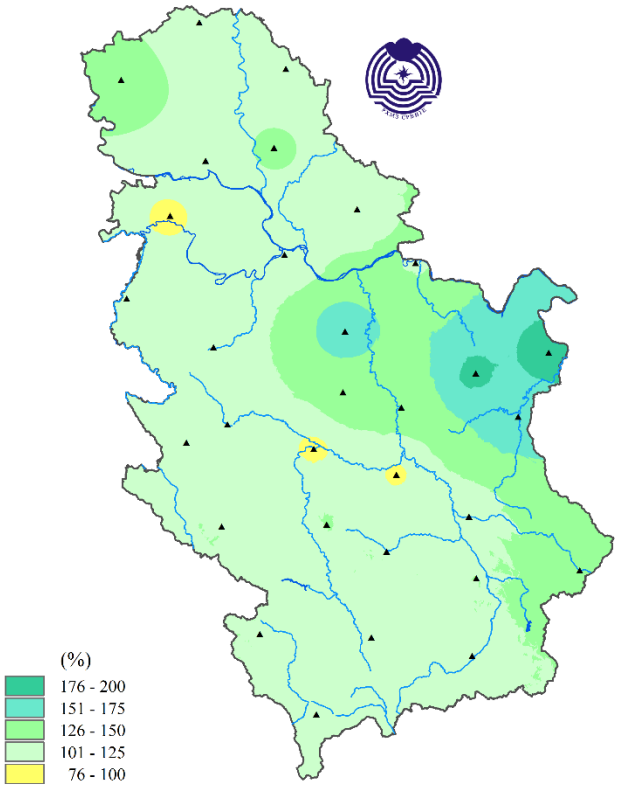


Figure 24. Spatial distribution of winter precipitation sums in percentage of the 1961-1990 normal

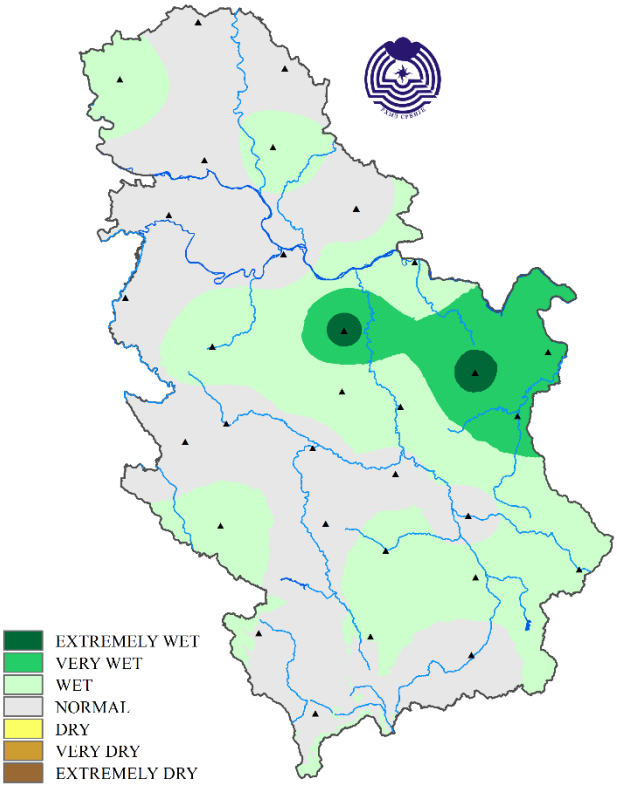
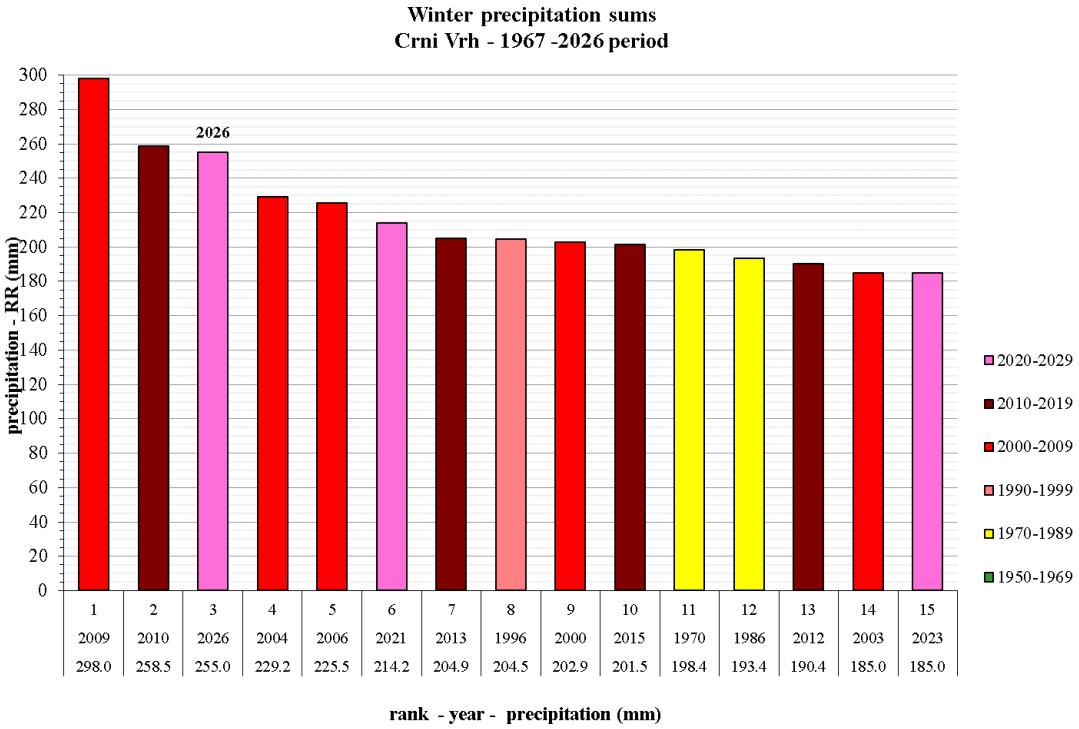


Figure 25. Winter precipitation sums according to the percentile method

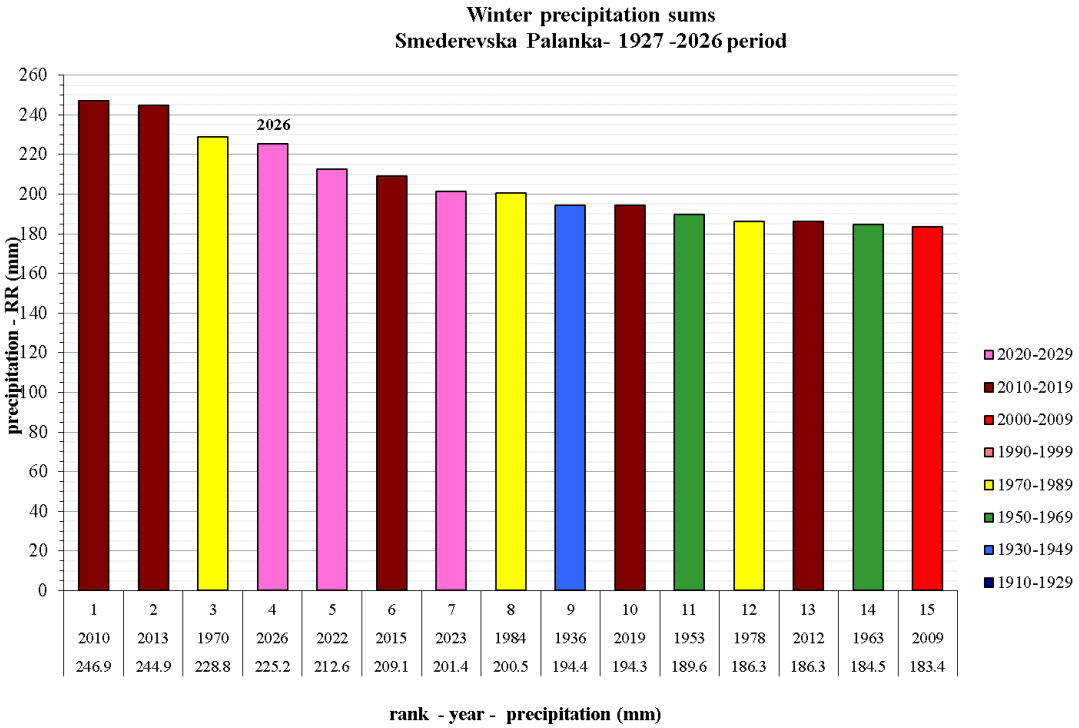
Note: Climatological analysis of the meteorological elements based on the preliminary data obtained from the 28 Primary meteorological stations

APPENDIX

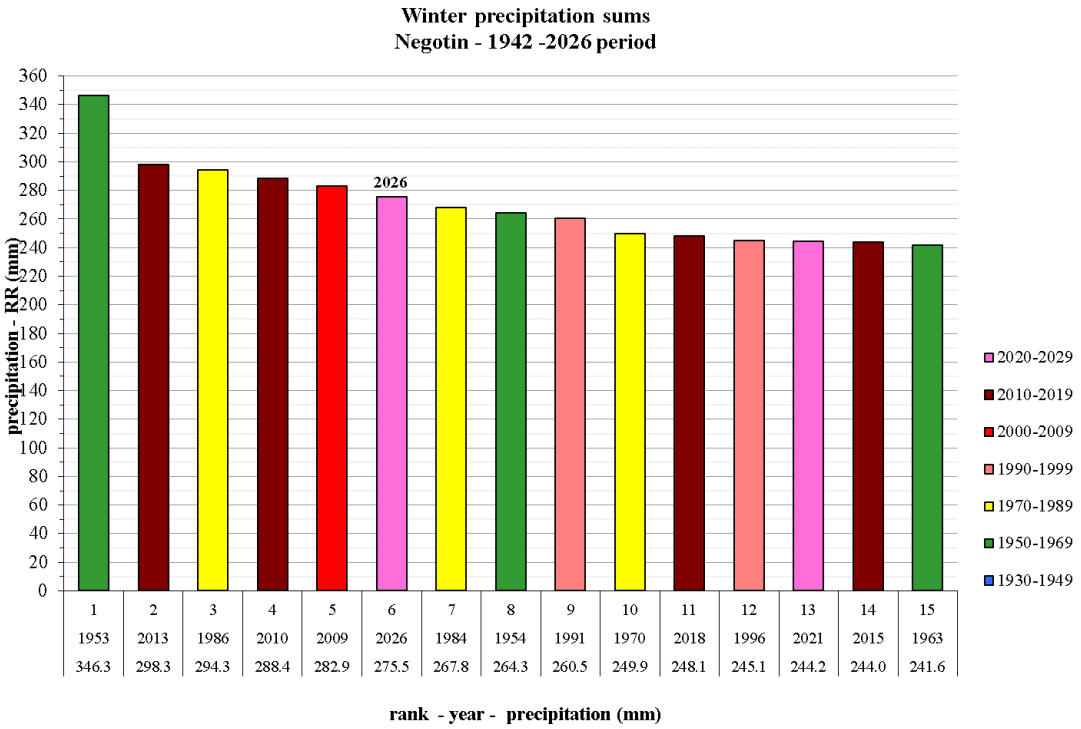
Ranks of the wettest Winter



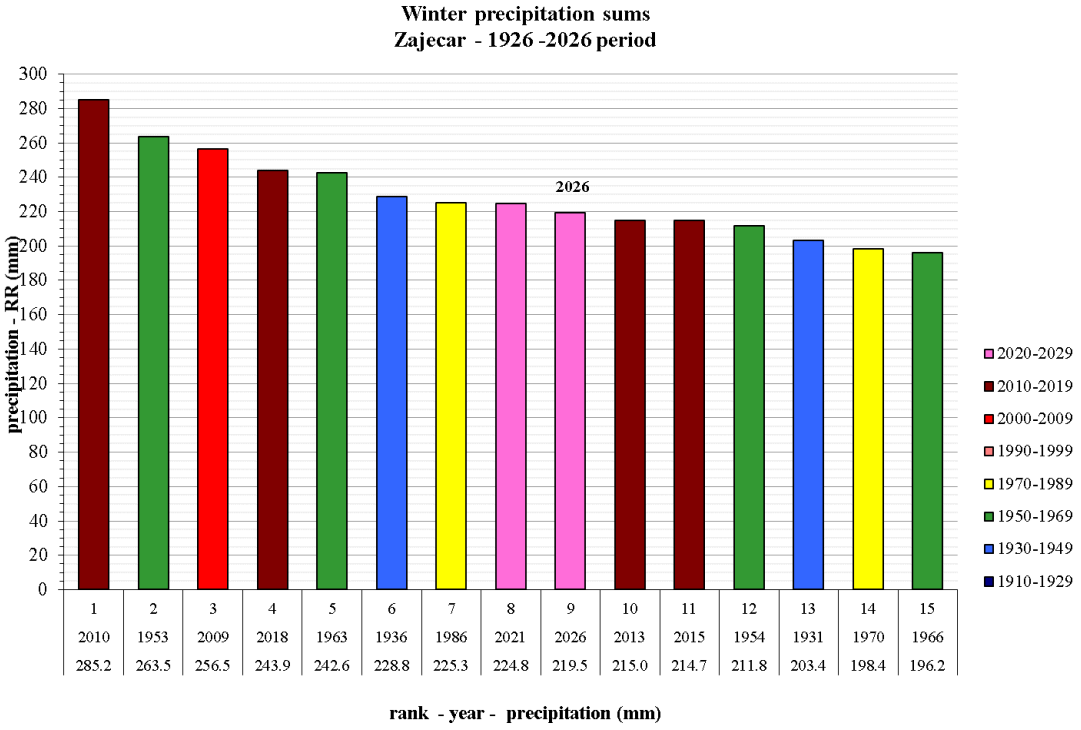
Appendix 1. Rank of the highest precipitation on Crni Vrh



Appendix 2. Rank of the highest precipitation in Smederevska Palanka

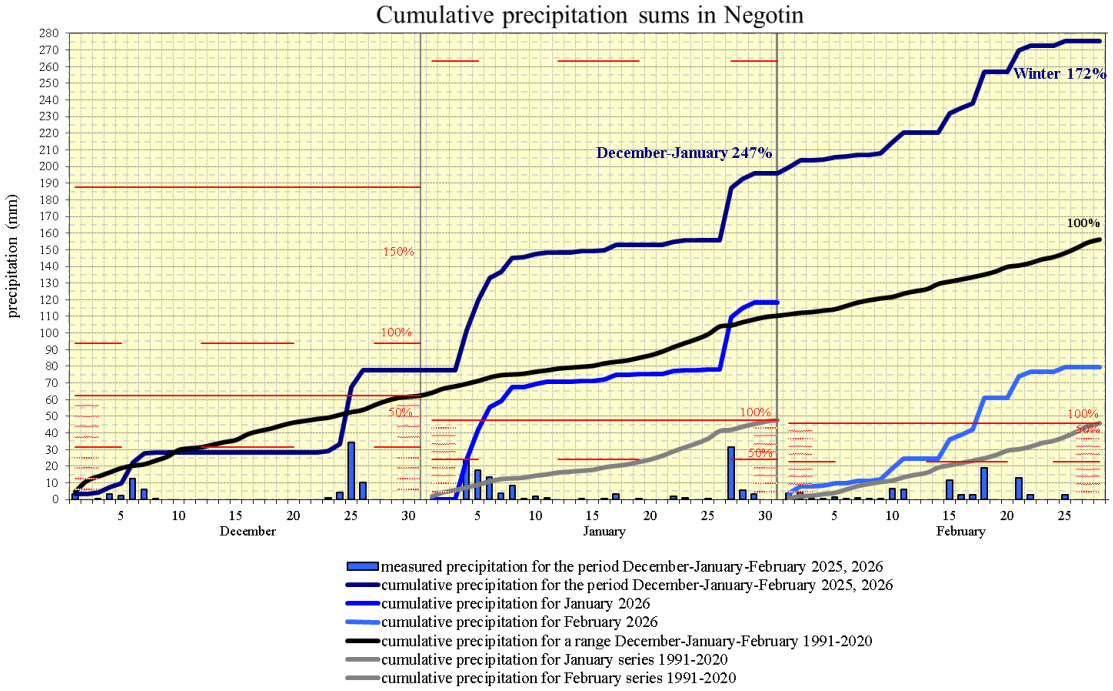


Appendix 3. Rank of the highest precipitation in Negotin

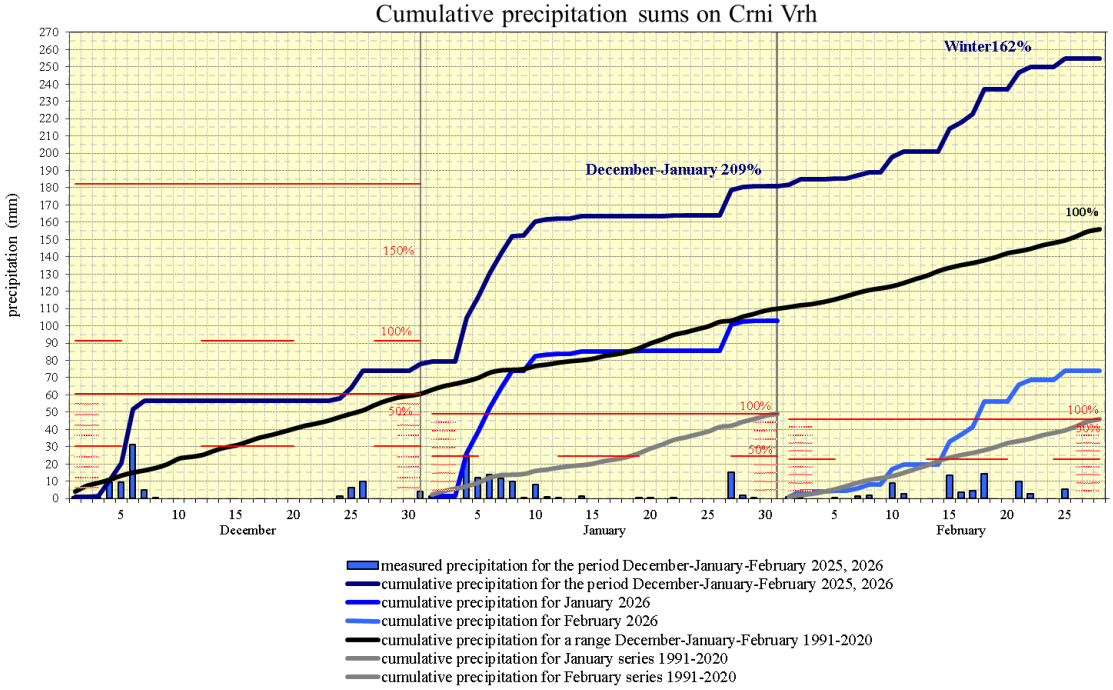


Appendix 4. Rank of the highest precipitation in Zajecar

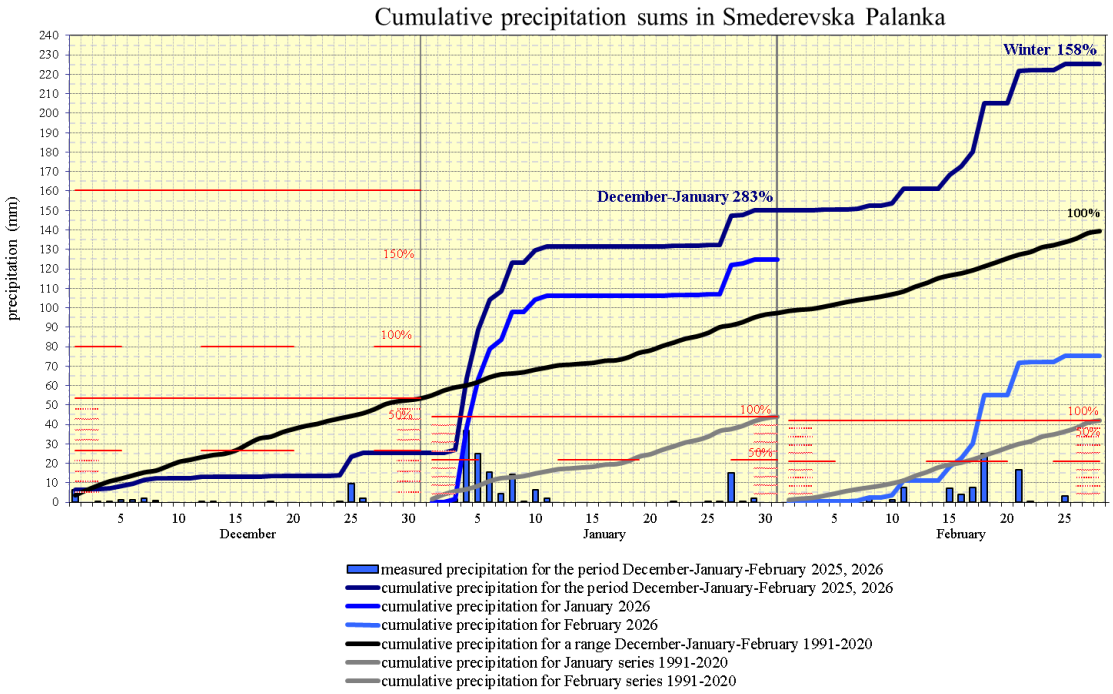
Cumulative precipitation



Appendix 5. Daily and cumulative precipitation sums for Negotin



Appendix 6. Daily and cumulative precipitation sums for Crni Vrh



Appendix 7. Daily and cumulative precipitation sums for Smederevska Palanka